AYK REGION

SUBSISTENCE RPT #14

Progress Report
1983
Resource Harvest by
Local Residents of the
Upper Koyukuk Region

Inventory Conducted July, August 1984

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Fishing

Figure 2 and Table 5 detail percentages of surveyed households fishing for particular species and household harvest data. Chum salmon was the species harvested by the greatest number of households in Allakaket/Alatna, over 50%, while whitefish, sheefish, and king salmon were harvested by at least 40% of the surveyed households. Whitefish was the species taken in the greatest number, caught predominately by seining. Salmon usually were taken over a period of weeks with setnets. Sheefish were harvested by seining, setnet, and rod and reel.

Bettles/Evansville households participated to the greatest extent in grayling fishing, with over 60% of surveyed households involved in the harvest. Chum salmon, pike, and trout were the next in number of households harvesting, each with 23.8% of the households participating. Grayling was the species harvested in the greatest numbers. Fishing by hook and line accounted for the greatest percentage of take and effort for all species in Bettles/Evansville (Table 6). Only 4 Bettles/Evansville households put out setnets during 1983, and none seined.

The location of Allakaket's and Alatna's fishing effort is shown in Fig. 3. Figures 4 and 4a depict the areas fished by Bettles/Evansville households. Almost all of the setnet activity of Allakaket/Alatna households took place on the Koyukuk River within 20 river miles of the village. Seven of the 45 surveyed Allakaket/Alatna households (15.6%) actually fished within the refuge. Three of the 21 surveyed Bettles/Evansville households (14.3%) fished, using setnets, within the refuge, on the North and South Forks and their sloughs. Lake trout and arctic char were generally taken recreationally by Bettles/Evansville residents in lakes of Gates of the Arctic National Park and Preserve, accessed by airplane. Most other Bettles/Evansville fishing activity centered on the Koyukuk and John Rivers within 5 river miles of the village.

Hunting

Figure 5 shows the percentage of participation in hunting for the various species while Table 7 provides household harvest data for 1983. Almost all surveyed families living along the upper Koyukuk River attempted to harvest moose. Moose was the one species that the largest percentage of Bettles/Evansville households harvested (see Fig. 5). Moose was also an important species to the people of Allakaket, with 46.7% of the surveyed households harvesting. Only geese and duck hunting showed a higher participation rate in Allakaket/Alatna. Bettles/Evansville had a mean household harvest of .57 moose. Allakaket/Alatna had a mean harvest of .51 moose.

The hunting areas for large game used by Allakaket and Alatna are depicted on Figure 6. Figure 7 shows the areas used by residents of Bettles/Evansville. Allakaket/Alatna exert a greater hunting pressure on the mammalian resources of Kanuti NWR than do hunters from Bettles/Evansville. Sixteen big game animals (moose, black bear, grizzly bear) were taken from within the boundaries of the refuge by Allakaket/Alatna residents as opposed to three by residents of Bettles/Evansville (see Table 7). Most of the hunting activity of Allakaket/Alatna radiates from the village up the Koyukuk River to its confluence with the South Fork, along the South Fork, the Alatna, and Kanuti

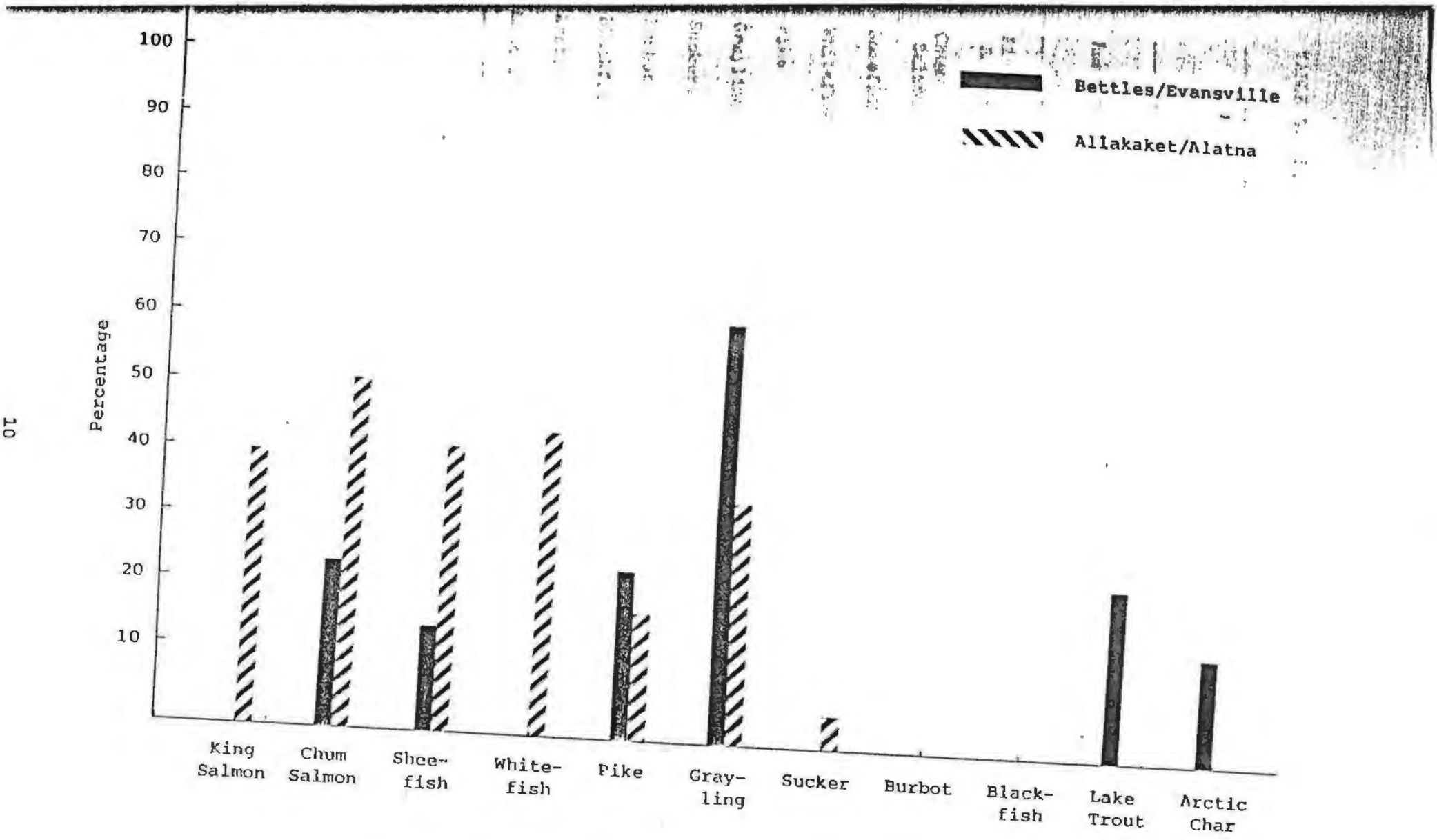

FIGURE 2. FISHING PARTICIPATION - PERCENTAGE OF HOUSEHOLDS HARVESTING FISH IN 1983

TABLE 5. Fishing Harvests, 1983

Resource	Bettles/Evansville N=21				Allakaket/Alatna N=45			
	# of Hslds. Part.	Range Hsld. Hvst.	Mean Hsld. Hvst.	Total Comm. Hvst.	# of Hslds. Part.	Range Hsld. Hvst.	Mean Hsld. Hvst.	Total Comm. Hvst.
King Salmon	0	NA	NA	0	18	2-84	8.8	396
Chum Salmon	5	2-300	20.3	426	23	10-1110	239.2	10765
Sheefish	3	1-20	1.1	23	19	2-400	34.2	1540
Whitefish	0	NA	NA	0	20	10-5000	258.0	11610
Pike	5	1-100	5.5	115	8	1-100	5.5	248
Grayling	13	2-120	38.4	807	16	4-200	14.0	631
Suckers	0	NA	NA	0	2	280-500	17.3	780
Burbot	0	NA	NA	0	0	NA	NA	0
Blackfish	0	NA	NA	0	0	NA	NA	0
Arctic Char	3	10-125	6.9	145	0	NA	NA	0
Lake Trout	5	1-210	12.1	241	0	NA	NA	0

TABLE 6. Fishing Methods and Efforts, 1983

	Bettles/Evansville								Allakaket/Alatna							
	Icenet		Seine		Rod & Reel		Setnet		Icenet		Seine		Rod & Reel		Setnet	
	# of Fish	Days Fished	# of Fish	Days Fished	#of Fish	Days Fished	# of Fish	Days Fished	# of Fish	Days Fished	# of Fish	Days Fished	# of Fish	Days Fished	# of Fish	Days Fished
Chum Salmon	-	-	-	-	4	1	422	61	-	-	20	5	-	-	10745	1020
King Salmon	-	-	-	-	-	-	-	-	-	-	-	-	-	-	396	748
Sheefish	-	-	-	-	22	4	1	7	200	*	500	7	55	48	785	513
Whitefish	-	-	-	-	-	-	-	-	246	31	9908	17	104	15	1352	562
Pike	-	-	-	-	115	88	-	-	-	-	-	-	11	3	237	240
Grayling	-	-	-	-	707	182	100	7	-	-	-	-	547	83	84	25
Suckers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	780	52
Burbot	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blackfish	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lake Trout	-	-	-	-	254	108	-	-	-	-	-	-	-	-	-	-
Arctic Char	-	-	-	-	145	100	-	-	-	-	-	-	-	-	-	-

Information gathered from 21 of 26 Bettles/Evansville households and 45 of 51 Allakaket/Allakaket households.

* Data not available

store clerical positions), employment opportunities for them in Allakaket/Alatna would appear to be fairly constant (see Table 4).

Comparison of data for 1982 and 1983 in Allakaket/Alatna shows an increase in the number of household heads employed and duration of employment in the second year of the survey. In 1982, 78% of surveyed household heads were employed for an average of 3.7 months (Marcotte & Haynes 1985:23). During 1983, 86.5% of surveyed household heads worked an average of 4.2 months. Average duration of employment for surveyed individuals (not limited to household heads) increased from 4.1 to 4.9 months. The increase in number employed and duration of employment in 1983, judging from ages and appearances of new buildings, as well as survey information (see Table 4), may be explained at least in part by an increase in village construction projects.

Change in Bettles/Evansville was less drastic, reflecting its more static employment pattern. Employment of household heads increased from 90.0% and 8.6 months duration to 90.5% employed for an average of 9.4 months. Average duration of employment for those surveyed from the general population remained at 1982's level of 9.2 months (see Table 3 and Marcotte & Haynes 1985:21).

Fishing

Though essentially equal proportions of residents surveyed in Allakaket/Alatna and Bettles/Evansville engaged in fishing, the methods, amount of effort, and numbers of fish caught were vastly different. In Bettles/Evansville, 62% of the families surveyed spent some amount of time during 1983 fishing. More families spent more time 'hooking' (rod and reel) for grayling than any other method for any other kind of fish (see Table 6). Four households used setnets for salmon. Five households fished "recreationally" for arctic char and lake trout in Gates of the Arctic National Park and Preserve. In comparison, 64% of the families surveyed in Allakaket/Alatna engaged in some form of fishing during 1983. The majority of the fishing effort in Allakaket/Alatna was directed toward operating summer setnets which caught large proportions, if not all, of the total take of sheefish, king salmon, chum salmon (including summer and fall chum), whitefish, pike, and grayling (see Table 6). The differences in numbers harvested in 1983 between the villages can be explained in part by the very different levels of effort put into fishing by village residents, and by preferences for certain species over others. Additionally, the populations of many species, especially salmon, are greater in the Koyukuk River near Allakaket/Alatna than Bettles/Evansville. The people of Allakaket/Alatna appear to depend upon the fisheries resources of the area to a greater extent than do the Bettles/Evansville residents. The need to harvest large numbers of fish surpasses getting enough to meet the demands of human consumption. Fish are also an important portion of the diet of the village dogs. In Allakaket/Alatna, there are at least six households who have teams of at least 10 dogs, and two with as many as 20. It takes a multitude of fish to feed that many dogs the entire winter.

A comparison of data between 1982 and 1983 brings to light some interesting changes in the harvest of fish resources. Percentages of Allakaket/Alatna households involved in fishing were notably down in 1983 for all species except chum (see Figure 2 and Marcotte & Haynes 1985:36). Household

TABLE 16. 1973, 1982, 1983 Fishing Harvests

Resource	Bettles/Evansville N=21						Allakaket/Alatna N=45					
	1973*		1982**		1983		1973*		1982**		1983	
	Total Comm. Hvst.	Mean Hsld. Hvst.	Total Comm. Hvst.	Mean Hsld. Hvst.	Total Comm. Hvst.	Mean Hsld. Hvst.	Total Comm. Hvst.	Mean Hsld. Hvst.	Total Comm. Hvst.	Mean Hsld. Hvst.	Total Comm. Hvst.	Mean Hsld. Hvst.
King Salmon	0	(a)	9	0.5	0	NA	300	(a)	322	9.2	396	8.8
Chum Salmon	0	(a)	532	26.6	426	20.3	12600	(a)	11497	328.5	10765	239.2
Sheefish	0	(a)	212	10.6	23	1.1	1600	(a)	2451	70.0	1540	34.2
Whitefish	50	(a)	210	10.5	0	NA	24000	(a)	4858	138.8	11610	258.0
Pike	50	(a)	10	0.7	115	5.5	500	(a)	401	11.5	248	5.5
Grayling	200	(a)	491	24.6	807	38.4	1000	(a)	1639	46.8	631	14.0
Suckers	100	(a)	0	NA	0	NA	400	(a)	480	13.7	780	17.3
Burbot	(a)	(a)	0	NA	0	NA	(a)	(a)	58	1.7	0	NA
Blackfish	(a)	(a)	0	NA	0	NA	(a)	(a)	(a)	(a)	0	NA
Arctic Char	(a)	(a)	61***	3.1***	145	6.9	(a)	(a)	0***	NA***	0	NA
Lake Trout	0	(a)			258	12.1	(a)	(a)			0	NA

* Nelson, Mautner, and Bane 1982.
** Marcotte and Haynes 1985.
*** Lake trout and arctic char harvest figures combined for 1982.
(a) Data not available.

nvolvement may have been reduced due to increased availability of jobs in the village. A comparison of total surveyed community harvests and mean household harvests shows a reduction in actual harvest of most species. Grayling, pike, chum, and sheefish show a marked drop in numbers taken. Sucker harvest was up, and whitefish were taken in far greater numbers than in 1982.

Bettles fishing harvests of 1982 and 1983 show a high degree of variation. The harvest of species that were taken by rod and reel- grayling, pike, and trout- increased in numbers during 1983. Sheefish and chum salmon show a decrease in the level of harvest, while no king salmon and whitefish were taken by surveyed households.

Maintenance of current fish population levels and harvest is dependent upon maintenance of water quality. A major concern of interviewees, particularly in Bettles/Evansville, is the impact of upstream mining activities on water quality and fish populations. Proposed and exisiting mining activity may pose a serious threat to the continued productivity of the upper Koyukuk's fisheries resources.

Hunting

Hunting is an activity carried out by nearly all households in the surveyed villages. Many of the individuals engaged in hunting activities do so on an opportunistic basis. Guns are carried on most trips outside the village, and if game animals are encountered, attempts may be made to harvest them. Rarely is one species the sole attraction during a hunting expedition. During an autumn moose hunt, for instance, waterfowl and bear may be taken if the opportunity presents itself. Fish often will be harvested during the trip for immediate consumption. When game is available and needed, it will be hunted, sometimes regardless of regulatory seasons.

Although in recent past, caribou have been an abundant and heavily harvested resource (Nelson, et al. 1978), perhaps the single most important mammalian species to the local residents of the upper Koyukuk today is moose. Almost all families in the surveyed villages participated in or benefitted from moose hunting. Residents of Allakaket/Alatna take a greater proportion of their moose from within the boundaries of Kanuti NWR than do the people of Bettles/Evansville. This may be due in large part to the close proximity of Allakaket/Alatna to prime moose habitat and traditional hunting areas within the refuge, and the desire to hunt upriver from home in case of a mechanical failure. With a few notable exceptions, residents were not inclined to discuss moose hunting out of ADF&G's established seaons. It is questionable whether or not the figures obtained for the moose harvest give an accurate account of the 1983 hunting effort.

A comparison between the big game harvests of 1973, 1982, and 1983 in Allakaket/Alatna and Bettles/Evansville is presented in Table 17. Reported harvests for all species in Allakaket/Alatna, except for grizzly bear, show a decline in numbers for 1983. The harvest of black bears showed the greatest decrease in Allakaket/Alatna.

Respondents reported very few caribou and sheep kills (see Table 17), indeed, very few individuals hunted in regions where there was a very great probability of encountering any. This is strikingly contrary to the data from